

WHAT IS CLAIMED IS:

1. A lathe attachment device to produce a round section article with complicated surfaces, said device comprising:
  - a multi-teeth beveled cutter, said cutter having a flat cutting side with the greatest diameter facing a rough portion of said article to be cut, each tooth of said cutter shaped in a generally triangular form and having cutting edge terminated in a pointed end along said cutting side of said cutter,
  - a balancing unit having a cutter drive means adapted to rotate said cutter and hold it against said article in a predetermined position, and
  - a moving means to draw said balancing unit along the article,whereby during the cutting process, said teeth each engage said rough portion of said article to be cut mostly laterally thereby significantly reducing the radial load on said article.
2. The device as in claim 1, wherein said cutter drive means adapted to rotate said cutter in a direction opposite to the rotation of said article, said cutter drive means rotating said cutter with a speed greater than the speed of rotation of said article.
3. The device as in claim 1, wherein said balancing unit further comprising a copier means adapted to move said cutter towards and away from said article in accordance with the shape of a template.
4. The device and in claim 3, wherein said copier means further comprising a copier pin resting directly against said template.

5. The device as in claim 1 further comprising a holding means to position said cutter so that its axis of rotation forms small acute angles to the axis of rotation of said article in both horizontal and vertical planes, said angles ranging between 3 and 9 degrees.
6. The device as in claim 5, wherein said angles are both set at about 5 degrees.
7. The device and in claim 1, wherein said balancing unit is further equipped with a counterweight.
8. The device and in claim 1, wherein each tooth having a top with a cross-section forming a triangle or a trapezoid in which one of the sides is perpendicular to the plane of said cutter and another forms an acute angle therewith.
9. The device and in claim 1, wherein said balancing unit having a center of gravity above said article.
10. The device and in claim 1 further equipped with attachment means to said lathe.